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EXAMINER

ADDISU, SARA

ART UNIT	PAPER NUMBER
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3722

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Please find below and/or attached an Office communication concerning this application or proceeding.



## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The rejection of claims 5-8 under second paragraph of 35 U.S.C. 112 is withdrawn due to the amendment submitted 10/7/05.

### ***Response to Arguments***

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Regarding Applicant's arguments (page 5, 3<sup>rd</sup> paragraph) that " 37 C.F.R. 1.81 only requires a drawing "where necessary for the understanding of the subject matter sought to be patented. Additionally, M.P.E.P. 608.02(d) with reference to 37 C.F.R. 1.83, states that any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing." , Examiner respectfully directs Applicant to M.P.E.P. 608.02(d) with reference to 37 C.F.R. 1.83, which states "The drawing in a nonprovisional application must show every feature of the invention specified in the claims. However, conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box)).

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “gripper claimed in Claim 8, line 2, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osburn et al. (U.S. Patent No. 3,825,245), in view of Selander (U.S. Patent No. 4,090,287) and further in view of Mattson (U.S. Patent No. 4,480,738).

Osburn et al. teaches a vertical machining center having a tool slide moving in the Y-axis, a rotary table (27) holding a work-carrying pallet (30), work changer (workpiece feed)(44) that is in alignment with a rotatable work-carrying pallet (30) that moves on guides in the direction of work changer (workpiece feed)(44) ('245, figure 1).

However, Osburn et al. fails to teach the rotary table being directly contactable with the workpiece holders to change the workpiece holders. Osburn et al. also fails to teach controlled movements of the different machine components by a CNC machine.

SELANDER teaches a machining center having a tool slide moving in the Y-axis, a rotary table (18) holding a work-carrying pallet (24), workpiece storage support (workpiece feed)(44) that is in alignment with a rotatable work-carrying pallet (24) ('287, figure 1). SELANDER also teaches the rotary table (18) moving on guides (12, 14) such

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that it lines up with the workpiece storage support (workpiece feed)(44) ('287, figure 1).

Furthermore, SELANDER teaches rotary table (18) having a pair of horizontal pallet guideways (20 and 22) dimensioned to slideably receive a workpiece holder pallet (24) and having the same spacing and dimensions as horizontal guideways (46, 48) which are carried by the workpiece storage support (44). Guideways (20 and 22) and guideways (46, 48) are mounted at the same height and in position to be aligned therewith along the Z axis so that pallet (24) can be slid along the Z axis from ways (20 and 22) onto ways (46 and 48) ('287, Col. 2, lines 34-36 and Col. 3, lines 9-22).

SELANDER also teaches the end of ways (46 and 48) being adjacent to rotary worktable (18) close enough to permit smooth transfer of pallet (24) from rotary worktable (18) to workpiece storage support (44) or vice versa (i.e. rotary table is directly contactable with the workpiece holders to change the workpiece holders).

Furthermore, SELANDER teaches controls (not shown) for controlling movements of the machining center, such moving worktable support (16) along the X axis, extending and retracting spindle (34) from spindle head (32), and indexing worktable (18) ('287, Col. 2, lines 59-65).

Mattson teaches machine tool control system (20) for controlling the movements of the different components of the machine tool (Col. 4, lines 3-16).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify OSBURN ET AL. such that the rotary table has a pair of horizontal pallet guideways having the same spacing and dimensions OSBURN ET AL.'s horizontal guideways (51,53) which are carried by the workpiece

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storage support (44) as well as being mounted at the same height so that the workpiece holder/pallet slides from the rotary table to the workpiece feed, as taught by SELANDER for the purpose of having a simpler structure and lower in cost than the complex method taught by OSBURN ET AL. . It should be noted that OSBURN ET AL. utilized more moving parts to perform the same function (to change workpiece holders) such as actuating arms (55 and 66), pistons..etc, which requires more maintenance, parts and increased possibility for parts failure.

It would have also been obvious to one of ordinary skill in the art at the time of the invention was made to add machine control system (CNC) to control the movements of Osburn et al's invention, as taught by Mattson for the purpose of having displacement measuring systems which detect the positions of the machine slide relative to a zero point so that the actual slide positions can be taken into account for the machining of a workpiece leading to a better quality product/workpiece. Additionally, the use CNC on machines reduces the cycle time to load, machine and unload workparts relative to a workpart-holding spindle of the machine tool.

2. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osburn et al. (U.S. Patent No. 3,825,245), in view of Selander (U.S. Patent No. 4,090,287) and further in view of Mattson (U.S. Patent No. 4,480,738) and McMurtry et al. (U.S. Patent No. 5,478,300).

The modified device of Osburn et al. teaches a vertical machining center having a tool slide moving, a rotary table (27) holding a work-carrying pallet (30), and work changer (workpiece feed)(44), as set forth in the above rejection.

However, the modified device of Osburn et al. fails to teach the workpiece feed comprising a magazine. Osburn et al. also fails to teach the workpiece feed magazine comprising a wheel which carries the receivers and can be swiveled about a central axis.

McMurtry et al. teaches a vertical spindle CNC machining center having a computer for controlling its various operations (i.e. a tool slide which can be moved in a controlled manner), cassette-loading system (magazine workpiece feed)(15) that is in alignment with a cassette-receiving device (4) (rotary table about axis 4A), and cassette transfer mechanism for pushing and pulling the cassette axially (see figures 1 & 2 and Col. 3, lines 20-31 and Col. 5, lines 11-26). McMurtry et al. also teaches cassette-loading system (magazine workpiece feed)(15) on a chain conveyor (17, therefore rotates about a central axis) having plurality of receivers for workpiece holders and its movement is timed via a control system (202) (Col. 3 lines 65-67 to Col. 4, lines 1-13 and Col. 8, lines 24-35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify OSBURN ET AL. such that the workpiece feed comprises a magazine wheel which carries the receivers and can be swiveled about a central axis, as taught by MCMURTY ET AL. for the purpose of increasing the



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efficiency of the tool by making more workpieces available for machining without frequent interruptions (i.e. the tool stopping for the machine operator to manually load/unload workpieces).

3. Claims 7 and 8, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Osburn et al. (U.S. Patent No. 3,825,245), in view of Selander (U.S. Patent No. 4,090,287) and further in view of Mattson (U.S. Patent No. 4,480,738) and McMurtry et al. (U.S. Patent No. 5,78,300).

The modified device of Osburn et al. teaches a vertical machining center having a tool slide moving, a rotary table (27) holding a work-carrying pallet (30), and work changer (workpiece feed)(44), as set forth in the above rejection. Furthermore, Osburn et al. teaches pallet engaging arms (gripper) (55, 65) having rectilinear motion to change the workpiece holders ('245, figures 9-11).

McMurtry et al. teaches a vertical spindle CNC machining center having a computer for controlling its various operations (i.e. a tool slide which can be moved in a controlled manner), cassette-loading system (magazine workpiece feed)(15) that is in alignment with a cassette-receiving device (4) (rotary table about axis 4A), and cassette transfer mechanism for pushing and pulling the cassette axially ('300, figures 1 & 2 and Col. 3, lines 20-31 and Col. 5, lines 11-26). McMurtry et al. also teaches cassette-

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loading system (magazine workpiece feed)(15) on a chain conveyor (17, therefore rotates about a central axis) having plurality of receivers for workpiece holders and its movement is timed via a control system (202) ('300, Col. 3 lines 65-67 to Col. 4, lines 1-13 and Col. 8, lines 24-35). Furthermore, McMurtry et al. teaches workholder transfer mechanism (50) having a gripper (52) for change the workpiece holders.

Osburn et al. discloses the claimed invention (gripper changing the workpiece holders) except for the gripper being on the tool slide. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose a different location (as evidenced by McMurtry et al.) for the gripper (such as on the tool slide instead of the workpiece feed area) for the purpose of having easy access for maintenance/repair, because it has been held that rearranging parts of an invention involves only routine skill in the art.

### ***Allowable Subject Matter***

Claims 5 and 6 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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